Telecommunications Analysis Services

Outputs

- Internet access for U.S. industry and Government agencies to the latest ITS engineering models and databases.
- Contributions to the design and evaluation of broadcast, mobile, radar systems, personal communications services (PCS) and local multipoint distribution systems (LMDS).
- Standardized models and methods of system analysis for comparing competing designs for proposed telecommunication services.

Telecommunications Analysis Services (TA Services) gives industry and Government agencies access to the latest ITS research and engineering on a cost reimbursable basis. It uses a series of computer programs designed for users with minimal computer expertise or in-depth knowledge of radio propagation. The services are updated as new data and methodologies are developed by the Institute's engineering and research programs.

Currently available are: on-line terrain data with 1-arc-second (30 m) for CONUS and 3-arc-second (90 m) resolution for much of the world, and GLOBE (Global Land One-km Base Elevation) data for the entire world; the U.S. Census data for 2000, 1997 update, and 1990; Federal Communications Commission (FCC) databases; and geographic information systems (GIS) databases (ARCINFO). For more information on available programs, see the Tools and Facilities section (pp. 68–69) or call the contact listed below.

TA Services is currently assisting broadcast television providers with their transition to digital television (DTV) by providing a model for use in advanced television analysis (high-definition television, advanced television, and digital television). This model allows the user to create scenarios of desired and undesired station mixes. The model maintains a catalog of television stations and advanced television stations, updated weekly from the FCC, from which these scenarios are made. Results of analyses show those areas of new interference and the population and number of

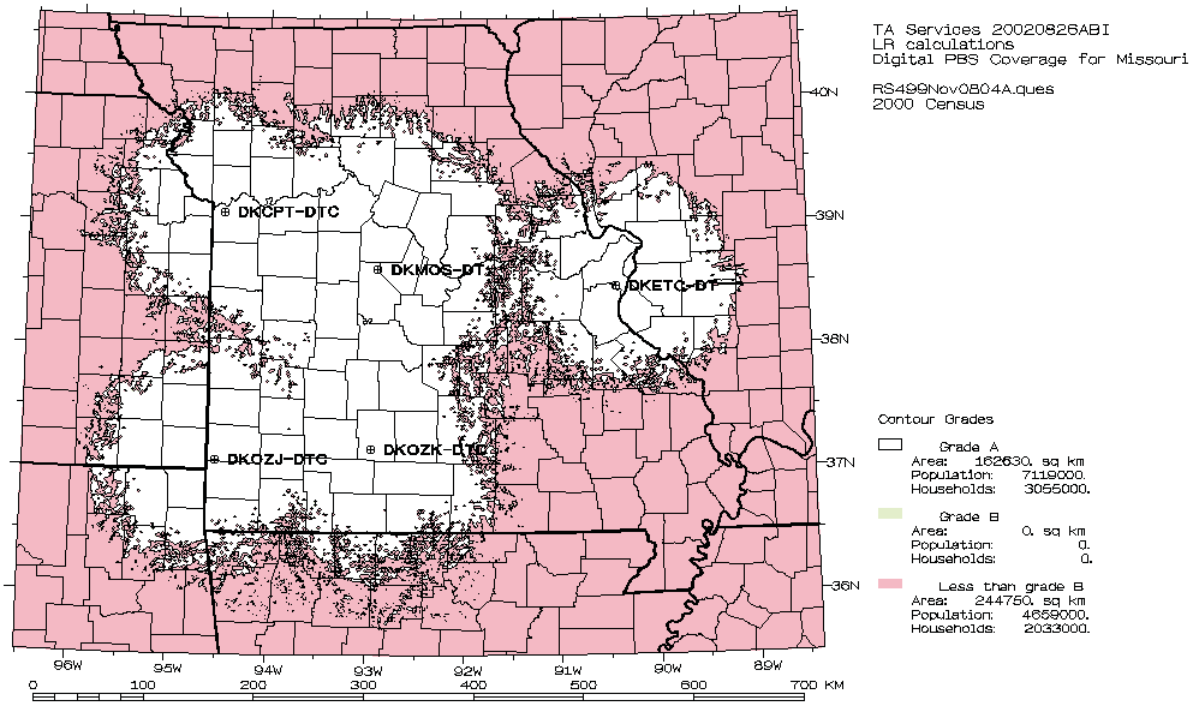

Figure 1. Digital PBS TV coverage for Missouri.

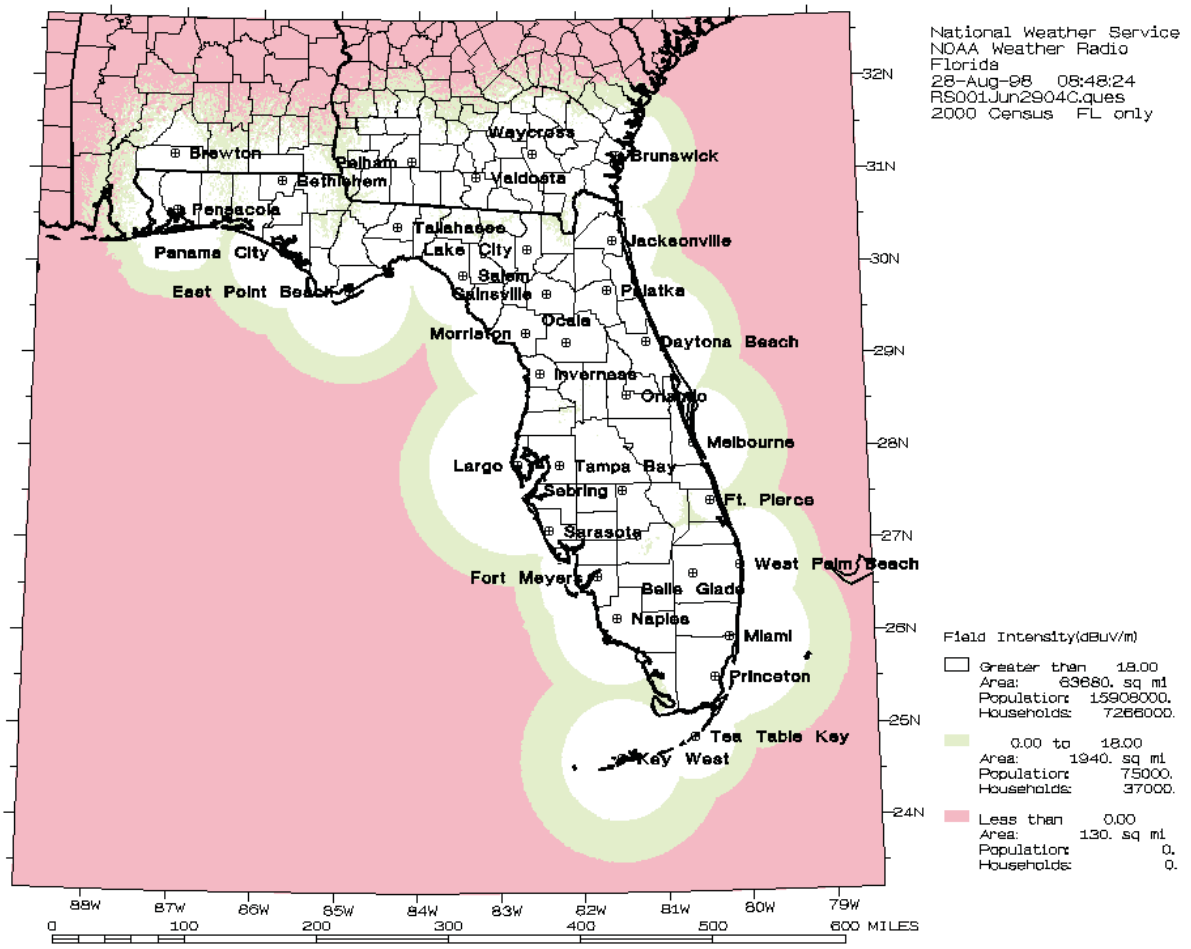

Figure 2. NWS station coverage for Florida.

households within those areas. The model can also determine the amount of interference a selected station gives to other stations. This allows the engineer to make modifications to the station and then determine the effect those modifications have on the interference that station gives other surrounding stations. In addition to creating graphical plots, the program creates tabular output which shows the distance and bearing from the selected station to each potential interferer as well as a breakdown of the amount of interference each station generates. This year, using this same program, all of the Public Broadcasting Service's (PBS) digital TV stations (350) were converted to ArcView shape files and sent to PBS for use with their own GIS software. Figure 1 on the previous page shows the digital PBS TV coverage for Missouri.

TA Services is also assisting the National Weather Service (NWS) in locating additional sites to increase its coverage for weather radio reports and emergency warning broadcasts, such as those issued in September 2004 for hurricanes on the east coast. Figure 2 above shows the calculated NWS coverage for Florida. TA Services calculates that 99.5% of the Florida population should be able to hear NWS weather radio broadcasts.

All models in TA Services and their outputs can be accessed via a network browser at http://flattop.its.bldrdoc.gov.

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